ABSTRACT OF THE DISCLOSURE

In one embodiment, the invention is directed to a zeroing circuit for a general purpose performance counter ("GPPC") connected to a bus carrying debug data. The zeroing circuit comprises logic for zeroing out a specified number of most significant bits ("MSBs") of a selected portion of the debug data based on a mask generated by a mask generator block. A selection control signal provided to the mask generator block is operable to be decoded to a particular mask.